

WHAT IS CLAIMED IS:

1 1. An organic electro luminescent display, comprising:
2 a first electrode formed on a lower insulating substrate;
3 auxiliary layers formed on edge portions of the lower insulating substrate away from
4 portions of the lower insulating substrate where the first electrode is form;
5 a pixel defining layer arranged to cover only a fraction of an upper surface of the first
6 electrode;
7 an organic layer arranged over exposed portions of the upper surface of the first
8 electrode, over the pixel defining layer and not over the auxiliary layers;
9 a second electrode formed on the organic layer; and
10 an upper substrate arranged to encapsulate the first electrode, the organic layer, and the
11 second electrode.

1 2. The display of claim 1, wherein the auxiliary layers serve to aid in a removal of
2 portions of the organic layer formed over the auxiliary layers in the edge portions of the display.

1 3. The display of claim 1, wherein the auxiliary layers comprise a material being selected
2 from the group consisting of ITO, IZO and ICO.

1 4. The display of claim 1, the auxiliary layers being comprised of a material selected
2 from the group consisting of acrylic photoresist and polyimide, the pixel defining layer being
3 comprised of the same material that the auxiliary layers are comprised of.

1 5. The display of claim 1, the auxiliary layers being comprised of a material having an
2 absorption rate that is higher than an absorption rate of the organic layer at a wavelength used to
3 remove the organic layer from the auxiliary layers.

1 6. The display of claim 1, the auxiliary layers being comprised of materials that require a
2 higher laser energy density to remove than the organic layer.

1 7. A method for fabricating an organic electro luminescent display, comprising:
2 forming a first electrode on a lower insulating substrate;
3 forming a pixel defining layer on only portions of the first electrode leaving portions of
4 the first electrode exposed;
5 forming auxiliary layers on the lower insulating substrate on a cathode contact and an
6 encapsulating junction region of the lower insulating substrate outside a pixel region;
7 forming an organic layer on the pixel defining layer, the exposed portions of the first
8 electrode and on the auxiliary layers;
9 removing portions of the organic layer arranged on the auxiliary layers;
10 forming a second electrode on remaining portions of the organic layer; and

11 encapsulating the first electrode, the organic layer, and the second electrode by an upper
12 substrate.

1 8. The method of claim 7, the auxiliary layers facilitate in the removal of portions of the
2 organic layer arranged on top of the auxiliary layers.

1 9. The method of claim 7, the auxiliary layers being comprised of a material selected
2 from the group consisting of ITO, IZO and ICO, the auxiliary layers being formed simultaneous
3 to the formation of the first electrode.

1 10. The method of claim 7, the auxiliary layers being comprised of a material selected
2 from the group consisting of acrylic photoresist and polyimide, the auxiliary layers being formed
3 simultaneous to the formation of pixel defining layer.

1 11. The method of claim 7, the auxiliary layers being comprised of a material having a
2 higher absorption rate at the wavelength used to remove the organic layer from the auxiliary
3 layers than the absorption rate of the organic layer.

1 12. The method of claim 7, the auxiliary layers being comprised of a material that
2 requires a higher laser energy density for removal than the energy density needed to remove the
3 organic layer.

1 13. The method of claim 7, wherein the step of removing the organic layer uses a laser
2 for the removal of the organic layers disposed on the auxiliary layers.

1 14. The method of claim 13, wherein an energy intensity of the laser for removal of the
2 organic layer disposed on the auxiliary layers is at least $50\text{mJ}/\text{cm}^2$.

1 15. The method of claim 14, wherein an energy intensity of the laser for removal of the
2 organic layer disposed on the auxiliary layers is at least $125\text{mJ}/\text{cm}^2$.

1 16. An organic electro luminescent display, comprising:
2 a lower insulating substrate on which TFTs and light emitting elements are formed;
3 an upper substrate attached to the lower insulating substrate;
4 an encapsulating junction region adapted to encapsulate and attach the upper substrate to
5 the lower insulating substrate via a sealant; and
6 a reflecting plate arranged in the encapsulating junction region at any one side of the
7 upper substrate and the lower insulating substrate.

1 17. The display of claim 16, the reflecting plate being formed on an inner side of one of
2 the upper substrate and the lower insulating substrate, the reflecting plate facing the other of the
3 upper substrate and the lower insulating substrate.

1 18. The display of claim 16, the reflecting plate being formed on an outer side of one of
2 the upper substrate and the lower insulating substrate.

1 19. The display of claim 16, the sealant being an optical curing sealant.

1 20. The display of claim 19, the sealant being an optical curable sealant cured by
2 exposure to light in either a visible ray range or an ultraviolet ray range.

1 21. The display of claim 16, the reflecting plate comprising a metal thin layer deposited
2 on any one side of the upper substrate and the lower insulating substrate.

1 22. The display of claim 16, the reflecting plate comprising a mirror attached to the outer
2 side of one of the upper substrate and the lower insulating substrate.

1 23. The display of claim 16, wherein a distance from the reflecting plate to a nearest
2 surface of a substrate opposing the reflecting plate is designed so that curing light reflected off
3 the reflective plate constructively interferes with curing light incident to the reflective plate.

1 24. An organic electro luminescent display, comprising:
2 a lower insulating substrate on which TFTs and light emitting elements are formed;

3 an upper substrate bound to the lower insulating substrate;
4 an encapsulating junction region adapted to encapsulate the upper substrate to the lower
5 insulating substrate via a sealant; and
6 a wave guide arranged in the encapsulating junction region on an inner side of one or
7 both of the upper substrate and the lower insulating substrate.

1 25. The display of claim 24, wherein the wave guide is unevenness.

1 26. The display of claim 24, wherein the wave guide is a convex lens.

1 27. The display of claim 24, wherein the wave guide is formed on both the upper
2 substrate and the lower insulating substrate.

1 28. The display of claim 24, wherein the encapsulating junction region being separate
2 from where the TFTs and the light emitting elements are arranged.

1 29. The display of claim 24, wherein the wave guide is comprised of a material with
2 optical transmissive property.

1 30. The display of claim 29, wherein the wave guide is comprised of a material selected
2 from the group consisting of SiO_2 and SiN_x .

1 31. An organic electro luminescent display, comprising:

2 a lower insulating substrate on which a pixel portion is arranged;

3 an upper substrate arranged over the lower insulating substrate; and

4 a sealing material arranged between the upper substrate and the lower insulating substrate

5 and adapted to seal the upper substrate to the lower insulating substrate, wherein a metal layer is

6 arranged between the lower insulating substrate and the sealing material.

1 32. The display of claim 31, wherein the sealing material is formed along the peripheries

2 of the substrates and not in the pixel portion of the display.

1 33. The display of claim 32, wherein the metal layer is formed coextensively along with

2 the sealing material and is of the shape of a closed polygon.

1 34. The display of claim 32, wherein the metal layer is formed discontinuously in

2 separate unconnected pieces around a perimeter of the display and along the sealing material.

1 35. The display of claim 31, the metal layer comprising a material being selected from

2 the group consisting of Al, Mo, Ti, Ag, Mg and an alloy containing at least one of Al, Mo, Ti,

3 Ag and Mg.

1 36. The display of claim 31, wherein at least 25 % of the total surface area of the sealing
2 material is in contact with said metal layer.

1 37. An organic electro luminescent display, comprising:
2 a lower insulating substrate on which a pixel portion is formed;
3 an upper substrate arranged on the lower insulating substrate; and
4 a sealing material arranged between the upper substrate and the lower insulating substrate,
5 the sealing material being adapted to attach the upper substrate to the lower insulating substrate;
6 and
7 a reflecting plate arranged between the lower insulating substrate and the sealing material.

1 38. The display of claim 37, the sealing material being arranged along peripheries of the
2 substrates and outside of the pixel portion.

1 39. The display of claim 38, wherein the reflecting plate is arranged to be coextensive
2 with the sealing material and is in the shape of a closed polygon.

1 40. The display of claim 38, the reflecting plate being a plurality of separate unconnected
2 segments arranged essentially along the sealing material.

1 41. The display of claim 37, wherein at least 25 % of an outer surface of the sealing
2 material is in contact with the reflecting plate.

1 42. The display of claim 37, the reflecting plate being comprised of metal.

1 43. The display of claim 42, the metal being selected from a group consisting of Al, Mo,
2 Ti, Ag, Mg and an alloy containing at least one metal of Al, Mo, Ti, Ag and Mg.

1 44. An organic electro luminescent display, comprising:
2 a lower insulating substrate on which TFTs and light emitting elements are formed;
3 an upper substrate bound to the lower insulating substrate;
4 an encapsulating junction region surrounding and outside of the TFTs and light emitting
5 elements, the encapsulating junction region adapted to attach the upper substrate to the lower
6 insulating substrate via a sealant; and
7 an auxiliary layer disposed in the encapsulating junction region of the display.

1 45. The display of claim 44, wherein the auxiliary layer is arranged on a layer being
2 selected from the group consisting of the upper substrate and the lower insulating substrate.

1 46. The display of claim 44, wherein the auxiliary layer is arranged on an outer side of
2 one of the upper substrate and the lower insulating substrate.

- 1 47. The display of claim 44, wherein the auxiliary layers are reflecting plates.
- 1 48. The organic electro luminescent display according to claim 44, wherein the auxiliary
- 2 layers are adapted to aid in removal by laser of organic layers deposited on the auxiliary layers.